

Entity Name	Attribute	Description	Data Type & Length	Attribute Domain	Nulls	Multi-valued	Derived	Primary Key
Employee	employeeNum	Uniquely identifies an employee	10-digit integer		No			Yes
	fullName	Full name of an employee			No			
	firstName	First name of an employee	30 variable characters		No			
	middleName	Middle name of an employee	30 variable characters		Yes			
	lastName	Last name of an employee	30 variable characters		No			
	nickname	Nickname of an employee	10 variable characters		Yes			
	dob	Date of Birth of an employee	Date		No			
	age	Age of an employee	10-digit integer		Yes		Yes	
	gender	Gender of an employee	1 character	M, F	Yes			
	address	Address of an employees			No			
	buildingNumber	Building number associated to the address of an employee	10 variable characters		No			
	postalCode	Postal Code associated to the address of an employee	5 characters		No			
	district	Name of the district associated to the address of an employee	40 variable characters		No			
	province	Name of the province associated to the address of an employee	40 variable characters		No			
	city	Name of the city associated to the address of an employee	40 variable characters		No			
	streetName	Name of the street associated to the address of an employee	40 variable characters		No			
	dailyWage	The total amount of wage per day for an employee in Thai Baht	4-digit integer		No			
	workingShift	Represents the day on which an employee has to attend the work, and the length in hours per day individually.			No	[1..7]		
	workingDay	Abbreviated name of day of week that represents the work day that an employee must attend the work e.g. Monday (MO), Tuesday (TU), Wednesday (WE), Thursday (TH), Friday (FR), Saturday (SA), Sunday (SU).	2 characters	MO, TU, WE, TH, FR, SA, SU	No			
	startingHour	Represents the number of hour on which an employee has to come to work before being considered to be late. Used in conjunction with starting minute.	2-digit integer	0 - 23	No			
	startingMinute	Represents the number of minute on which an employee has to come to work before being considered to be late. Used in conjunction with starting hour.	2-digit integer	0 - 29	No			
	lengthHour	Indicates the amount of time that an employee has to work in the day.	2-digit integer	1 - 24	No			
	citizenId	The citizen identification number of an employee	13 characters	0000000000000 - 9999999999999	No			
	nationality	The nationality of an employee	3 characters	AAA - ZZZ	No			
	contact	Contact of an employee			No			
	telephoneNumber	Telephone number of an employee (can be either mobile phone or land line)	10 variable characters	0000000000 - 9999999999	No	[1..3]		
	email	Email address of an employee.	320 variable characters		Yes			
	dailyWorkHours	Record of an employee's work hours in each day that the employee attends the work.			No	[1..*]		
	workAttendanceTime	Indicates the time on which an employee start his/her work.	Date Time		No			
	workGetOffTime	Indicates the time on which an employee end or leave his/her work.	Date Time		No			
	dailyWorkHour	Total length of work being done by an employee in hour.	2-digit integer	1 - 24	Yes		Yes	
Customer	customerNum	Uniquely identifies a customer	10-digit integer		No			Yes
	fullName	Full name of a customer			No			
	firstName	First name of a customer	30 variable characters		No			
	middleName	Middle name of a customer	30 variable characters		Yes			
	lastName	Last name of a customer	30 variable characters		No			
	nickname	Nickname of a customer	10 variable characters		Yes			
	dob	Date of Birth of a customer	Date		No			
	age	Age of a customer	10-digit integer		Yes		Yes	
	gender	Gender of a customer	1 character		Yes			
	address	Address of a customer			No			
	country	Name of the country associated to the address of a customer	40 variable characters		No			
	city	Name of the city associated to the address of a customer	40 variable characters		Yes			
	profession	Profession of a customer	40 variable characters		Yes			
	passport	The passport identification of a customer			No	[1..*]		
	number	Passport number of a customer	9 characters		Yes			
	expirationDate	Passport expiration date of a customer	Date		Yes			
	visa	The visa identification of a customer			Yes	[1..*]		
	visaClass	Visa class of a customer (e.g. TR = Tourist Visa, O-A = Coming to live as an elderly person)	6 variable characters		Yes			
	immigrationNumber	Immigration number which checks the customer information when they enter the country.	3-digit integer		Yes			
	arrivalDate	Approval date for entering the country	Date		Yes			
	departureDate	Approval date for leaving the country	Date		Yes			
	citizenId	The citizen identification number of a customer	13-digit integer		Yes			
	nationality	The nationality of a customer	40 variable characters		No			
	contact	Contact of a customer	10 variable characters		No			
	telephoneNumber	Indicates mobile phone number of a customer which includes area code and phone number.	15 variable characters		Yes	[1..3]		
	email	Email address of a customer.	320 variable characters		Yes			
Reservation	reservationNumber	Uniquely identifies a reservation	10-digit integer		No			
	createdTime	Time on which a reservation had been created.	Date Time		No			
	bookingPersonInfo	Booking information of a person.			No			
	firstName	First name of a person who reserved rooms	30 variable characters		No			
	middleName	Middle name of a person who reserved rooms	30 variable characters		Yes			
	lastName	Last name of a person who reserved rooms	30 variable characters		No			
	contact	Format-free Contact detail which can be LINE ID, email, phone number, or Facebook account name	30 variable characters		No			
	gender	Gender of a person who reserved rooms	1 character	M, F	Yes			
	expectedCheckInDate	Date on which the person is expected to check-in at the apartment	Date		No			
	expectedCheckOutDate	Date on which the person is expected to check-out from the apartment	Date		No			
	rentalType	Rental type that the person required e.g. Monthly rental (M), daily rental (D)	1 character	M, D	No			
	expectedDuration	The number of date that the rental expected to last.	3-digit integer		No		Yes	
	proposedRentalPrice	The expected cost of the rental based on the rental duration.	6-digit integer		No		Yes	
	proposedDepositAmount	The expected deposit of the rental.	4-digit integer		No		Yes	
	vendorNumber	Uniquely identifies each vendor	10-digit integer		No			Yes
	vendorName	The name of a vendor. If the vendor multiple branches, the name of a branch can also be included with the name.	30 variable characters		No			
	vendorType	Indicates the type of a vendor e.g. Convenient Store (C), Supermarket (S), Grocery (G).	1 character	C, S, G	No			
	address	Address of a vendor			No			
	buildingNumber	Building number associated to the address of a vendor	10 variable characters		No			

Entity Name	Attribute	Description	Data Type & Length	Attribute Domain	Nulls	Multi-valued	Derived	Primary Key
Vendor	streetName	Name of the street associated to the address of a vendor	40 variable characters		No			
	city	Name of the city associated to the address of a vendor	40 variable characters		No			
	province	Name of the province associated to the address of a vendor	40 variable characters		No			
	district	Name of the district associated to the address of a vendor	40 variable characters		No			
	postalCode	Postal Code associated to the address of a vendor	5 characters		No			
	contact	Contact of a vendor	10 variable characters		No			
	telephoneNumber	Telephone number of a vendor (can be either mobile phone or land line)	9 characters		No	[1..3]		
Feedback	email	Email address of a vendor	320 variable characters		Yes			
	feedbackNumber	Uniquely identifies each feedback	10-digit integer		No			Yes
	description	Feedback Explanation in details. It can be a issue report, praise or advise.	100 variable characters		No			
	satisfactionValue	Optional integer value that indicates feedback giver satisfaction from the scale of 0 (Worst) to 9 (Best).	1-digit integer	0 - 9	Yes			
	status	Indicates the status of the feedback. It can be reviewed (R), low priority (L), high priority (H), ignored (I).	1 character	R, L, H, I	No			
	createdTime	Time on which the feedback has been created.	Date Time		No			
	progressStartTime	Time on which the feedback has been started being worked on.	Date Time		Yes			
Purchasing	progressFinishTime	Time on which the feedback has been finished being worked on.	Date Time		Yes			
	purchasingNumber	Uniquely identifies each purchasing	10-digit integer		No			Yes
	timeCreated	Time on which the purchasing has been created	Date Time		No			
	timeApproved	Time on which the purchasing has been approved	Date Time		Yes			
	timeRejected	Time on which the purchasing has been rejected	Date Time		Yes			
	timePurchased	Time on which the purchasing has been purchased	Date Time		Yes			
	type	Indicate the type of the purchase. It can be either furniture (F), consumable resupply (R), appliance (A).	1 character	F, R, A	No			
PurchasingLine	status	Status of each purchasing	1 character	N, A, R, P	No		Yes	
	totalPrice	Total price of each purchasing	Precision 19, Scale 4 Decimal		No		Yes	
	timeAdded	Time on which the purchasing line has been added.	Date Time		No			
	pricePerUnit	Price per unit	Precision 19, Scale 4 Decimal		No			
	quantity	Quantity of each product	10-digit integer		Yes			
	discount	amount of discount of a product in the line	Floating point number		Yes			
	discountDescription	description of each discount	100 variable characters		Yes			
Supply	/totalLinePrice	Total price of each purchasing line	Precision 19, Scale 4 Decimal		No		Yes	
	supplyNumber	Uniquely identifies each supply	10-digit integer		No			Yes
	supplyName	Name of each supply	30 variable characters		No			
	type	type of each supply	1 character	R, N	No			
	unitPrice	price per unit of each supply	Floating point number		No			
	category	category of each supply	30 variable characters		No			
					No			
RoomObject	objectNumber	Uniquely identifies each room object	10-digit integer		No			Yes
	dateMovedIn	Move in date	Date Time		No			
RoomObjectModel	objectModelId	Uniquely identifies each room object model	10-digit integer		No			Yes
	objectModelBarCode	Barcode of a model	13 integers		No			
	objectModelCategory	Category of a non-consumable product model.		bed, chair, mirror, cupboard, television, air conditioner, fan, curtain, safe, bedsheet, pillow, blanket, electricKettle, vacuumCleaner, refrigerator	No			
			20 variable characters					
	objectModelMaterial	Material of a object model.	30 variable characters		No			
	objectMainColor	Main color of each model.	10 variable characters		No			
	maintenanceNumber	Uniquely identifies each maintenance	10-digit integer		No			Yes
Maintenance	createdTime	Time on which the maintenance has been created.	Date Time		No			
	status	The current status of each maintenance	30 variable characters		No			
	startingTime	Time on which the maintenance has been started being worked on.	Date Time		Yes			
	finishedTime	Time on which the maintenance has finished	Date Time		Yes			
	lastModifiedTime	The latest modify maintenance time.	Date Time		No			
	description	The description of each maintenance.	400 variable characters		No			
	category	Category of each a maintenance	30 variable characters		Yes			
FinancialTransaction	financialTransactionNumber	Uniquely identifies each financial transaction	10-digit integer		No			Yes
	description	The description of each financial transaction	400 variable characters		Yes			
	transactionDirection	The direction of financial transaction e.g. In transaction, Out transaction			No			
	amount	The amount of financial transaction	Precision 19, Scale 4 Decimal		No			
	createdTime	Time on which the financial transaction has been created.	Date Time		No			
	transactionTime	The transaction time of financial transaction.	Date Time		No			
	transactionStatus	The transaction status e.g. pending, review, flag			No			
Branch	category	Category of each financial transaction			Yes			
	branchNumber	Uniquely identifies each branch	2-digit integer		No			Yes
	branchName	The name of a branch.	20 variable characters		No			
	totalRooms	The total room of a branch.	2-digit integer		No		Yes	
	totalAvailableRooms	The total available room of a branch.	2-digit integer		No		Yes	
	totalEmployees	The total employee of a branch.	2-digit integer		No		Yes	
	maxCustomerCapacity	Maximum customer number of a branch.	2-digit integer		No		Yes	
	currentCustomerCapacity	Current customer number of a branch.	2-digit integer		Yes		Yes	
	totalCurrentReservations	The total current reservations number of a branch.	3-digit integer		No		Yes	
	address	Address of a branch			No			
	buildingNumber	Building number associated to the address of a branch	10 variable characters		No			
	streetName	Name of the street associated to the address of a branch	5 characters		No			
	city	Name of the city associated to the address of a branch	40 variable characters		No			
	province	Name of the province associated to the address of a branch	40 variable characters		No			
	district	Name of the district associated to the address of a branch	40 variable characters		No			

Entity Name	Attribute	Description	Data Type & Length	Attribute Domain	Nulls	Multi-valued	Derived	Primary Key
Rental	postalCode	Postal Code associated to the address of a branch	40 variable characters		No			
	contact	Contact of a branch			No			
	telephoneNumber	Telephone number of a branch (can be either mobile phone or land line)	10 variable characters		No	[1..3]		
	email	Email address of a branch	320 variable characters		Yes			
	rentalNumber	Uniquely identifies each rental	6-digit integer		No			Yes
	rentalType	Type of each rental e.g. Monthly, Daily	1 character		No			
	totalRentalFee	The total rental fee of each rental	Precision 19, Scale 4 Decimal		No		Yes	
	deposit	The deposit of each rental	4-digit integer		No			
	startingTime	Time on which the rental has been started.	Date Time		No			
	endingTime	Time on which the rental has ended.	Date Time		No			
RentalPeriod	pax	The number of customer	1-digit integer		No		Yes	
	totalDuration	The total day of a rental	3-digit integer		No		Yes	
	rentalFee	Amount of rental fee associated to the period.	Precision 19, Scale 4 Decimal		No			
	startingTime	Time on which the rental period has been started	Date Time		No			
CustomerRoomService	endingTime	Time on which the rental period has ended.	Date Time		No			
	periodCategory	Category of each rental period e.g. monthly (M), or daily (D).	1 character	M, D	No			
	serviceNumber	Uniquely identifies each customer room service	6-digit integer		No			Yes
	serviceType	Type of room service that can be requested by the customer e.g. Cleaning (C), resupply (R), etc.	1 character	C, R	No			
PropertyInspection	descriptions	Details of the room service that the customer has requested	300 variable characters		Yes			
	serviceStartTime	The timestamp marking the beginning of the room service	Date Time		No			
	serviceEndTime	The timestamp marking when the room service that was request was finished	Date Time		Yes			
	propertyInspectionNumber	Uniquely identifies each property inspection	10-digit integer		No			Yes
RoomServiceAction	timestamp	The timestamp marking the inspection of each property	Date Time		No			
	descriptions	The detail of each property that was inspected.	400 variable characters		No			
	roomServiceNumber	Uniquely identifies each room service	6-digit integer		No			Yes
CustomerBilling	serviceName	The name of the service that is about to be perform on the room	50 variable characters		No			
	description	The detail of the service that is about to be perform on the room	400 variable characters		Yes			
	billingNumber	Uniquely identifies each customer billing	10-digit integer		No			Yes
	amount	The amount of customer billing	Precision 19, Scale 4 Decimal		No			
	description	The description of each customer billing	200 variable characters		Yes			
CustomerBillingLine	status	Status of each customer billing e.g. pending (PE), paid (PA), unpaid (UN), due (DU), canceled (CA).	2 characters	PE, PA, UN, DU, CA	No		Yes	
	createdTime	Time on which a customer billing had been created.	Date Time		No			
	amount	The amount of customer billing	Precision 19, Scale 4 Decimal		No			
	lineItemName	Uniquely identifies each customer billing line	10 variable characters		No			
	amount	The amount of customer billing line	Precision 19, Scale 4 Decimal		No			
ExternalOperative	status	Customer billing line status e.g.	10 variable characters		No			
	billingTime	Time on which a customer billing line had been created.	Date time		No			
	firstName	First name of a external operative	30 variable characters		No			
	middleName	Middle name of a external operative	30 variable characters		Yes			
	lastName	Last name of a external operative	30 variable characters		No			
Room	phoneNumber	Telephone number of an external operative (can be either mobile phone or land line)	10 variable characters		No	[1..3]		
	roomNumber	Within one branch, a room number uniquely identify a room.	10-digit integer		No			
	roomSize	The size of room e.g. Standard room (STD), Superior room (SUP).	3 characters	STD, SUP	No			
	floor	The floor of a room	1-digit integer		No			
	totalBeds	The total beds in a room	1-digit integer		No		Yes	
RoomUtilityRecord	availability	The availability of a room e.g. Yes (Y), No (N).	1 character	Y, N	No		Yes	
	roomUtilNumber	Uniquely identifies each room utility record	10-digit integer		No			Yes
	recordedTime	The recorded time of each room utility record	Date time		No			
	electricityMeterUnit	Electricity meter unit of a room utility record	4 digit integer		No			
InventoryEntry	waterMeterUnit	Water meter unit of a room utility record	4 digit integer		No			
	entryNumber	Uniquely identifies each inventory entry	10 digit integer		No			Yes
	entryDescription	A short description the intended usages or remarks.	100 variable characters		No			
PropertyDamage	supplyUnitQuantity	Quantity of each supply in inventory	5 digit integer		Yes			
	propertyDamageNumber	Uniquely identifies each property damage	10-digit integer		No			Yes
	damageDescription	The description of each property damage	400 variable characters		No			
UtilityCost	damageSeverity	The damage severity of a property damage e.g. low (L), medium (M), high (H).	10 variable characters	L, M, H	Yes			
	utilityCostNumber	Uniquely identifies each instance of utility cost	10 variable characters		No			Yes
	/waterUtilityFee	The total amount of water utility fee in to be paid.	Precision 19, Scale 4 Decimal		No		Yes	
	electricityUnitRate	The rate of water cost. Baht per unit.	Precision 6, Scale 4 Decimal		No			
	waterUnitRate	The rate of electricity cost. Baht per unit.	Precision 6, Scale 4 Decimal		No			
	/electricityUtilityFee	The total amount of electucility fee in to be paid.	Precision 19, Scale 4 Decimal		No		Yes	
	/totalCost	The total utility that adds both electricity and water utility cost. A customer will have to pay at this amount.	Precision 19, Scale 4 Decimal		No		Yes	
	timeCreated	The time on which the utility cost is calculated.	Date time		No			
RequestRoomService	serviceChargeAmount	The amount of service fee that will be charge for the room service performed.	Precision 19, Scale 4 Decimal		No			
RoutineRoomService	assignedTimeStamp	The time assign for the room to be routinely cleaned	Date Time		No			
Cleaning	cleaningType	The type of cleaning that was perform on the room e.g. Full (F), Bed only (B), Toilet only (T).	1 character		No			
ReturningSupply	returningTimeWindow	Time on returning a supply	Date Time		No			
ReturningDeposit								
PurchasingDeposit								
Withdrawal								
Accountant								
Manager								
CleaningPersonnel								
AddingSupply								